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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROLF SKOLD

Appeal 2008-2366
Application 09/381,828
Technology Center 1700

Decided: December 8, 2008

Before BRADLEY R. GARRIS, CATHERINE Q. TIMM, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Statement of the Case

Appellant appeals under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1, 2, 4-8, and 10-18. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM the Examiner's decision.

Appellant claims an automatic method and a device for the characterization of physical and/or chemical properties of a liquid in which a computer and a control program are used to determine, store, and compile into a three-dimensional diagram values for dependent and independent property variables.

Further details concerning the claimed method and device are set forth in representative independent claims 1 and 7, which read as follows:

1. An automatic method for the characterisation of physical and/or chemical properties of a liquid, said method comprising:

1) measuring at least one dependent physical and/or chemical property of a liquid in a measuring cell as a function of temperature and a component concentration as independent variables[;]

2) determining by calculation the values for the component concentration in the measuring cell based on data from a control program for the change of component concentration and determining the temperatures by calculation from a temperature control program or by measurements;

3) changing the value of the component concentration in the measuring cell by adding in one step or gradually a predetermined amount of another liquid containing a different component concentration into the measuring cell according to a component concentration control program, and performing a representative number of measurements of the dependent physical or chemical property in the measuring cell within a whole selected temperature range within the predetermined change of the component concentration[;]

4) repeating the procedures above at desired component concentrations and temperatures in order to obtain a wanted number of values;

5) the values obtained for the dependent properties are combined with the values for the independent properties to measuring points and stored electronically in a computer; and

6) coordinating and visualizing the electronically stored measuring points in a three-dimensional diagram.

7. A device for the characterisation of the physical and/or chemical properties of a liquid, wherein said device comprises:

a) a measuring cell (1) provided with

i) an equipment (2) for the homogenisation of a liquid,

ii) at least two control equipment (3, 17), which comprise or are attached to control programs for changing of the two independent variables, component concentration and temperature, in a predetermined manner, the control equipment (3) of the component concentration comprising a dosage organ for the addition of another liquid containing a different component concentration to the measuring cell,

iii) at least one measuring organ (9, 13, 14) for the determination of at least one dependent physical and/or chemical property of the liquid, and

iv) optionally a measuring organ (15) for the determination of the temperature,

b) at least one computer (5) for

i) the reception and storage of data relating to the dependent and independent variables via at least one electronic circuit (11', 12', 13', 14', 15') and the calculation of at least the component concentration from data obtained from the control program and

ii) compilation of the received and calculated values into three-dimensional measuring points, and

c) equipment (16) for visualisation of the measuring points stored in the computer in a three-dimensional diagram.

The prior art set forth below is relied upon by the Examiner as evidence of obviousness:

C. Tondre et al., *On An Automated Device for the Determination of Isotropic Microemulsion Phases of Ternary Systems Including A Nonionic Surfactant*, Journal of Dispersion Science and Technology, 7(5), 581-597 (1986).

J. Rouse et al., *Automation of Phase Diagram Recording*, Journal of the American Oil Chemists Society, 72, 37-42 (1995).

Zs. Dombay et al., *Investigation of Emulgation and Emulsion Stability of Thiocarbamate Herbicides*, Proc. Conf. Colloid Chem. Mem., Ervin Wolfram, 5th 1990, Meeting Date.

D. Hagan et al., *Modular Software-Controlled Electrochemical System*, Review of Sci. Instrum., 58(3), 468-474, 1987.

Tomoshige Nitta et al., *Phase Equilibrium Calculations and Three-Dimensional Computer Graphics Representation*, Fluid Phase Equilibria, 53, 105-112, (1989).

William B. Streett, *Phase Behavior in Fluid and Solid Mixtures at High Pressures*, Pure & Appl. Chem., 61, No. 2, 143-152 (1989).

Zequan Yan et al., *Automated Establishment and Plotting of Multivariate Functions*, Analytica Chimica Acta 234, 493-497 (1990).

L. I. Khomutov, *Temperature-Composition Phase Diagram and Gel Properties of the Gelatin-Starch-Water System*, Carbohydrate Polymers, 28, 341-345 (1995).

Nobumichi Ohno et al., *Isotope Effects on Hydrophobic Interaction in Hydrophilic Polyelectrolytes*, Macromolecules, 18, 1287-1291 (1985).

K. Subba Ramaiah et al., *Some Interesting Phenomena at the Solid-Liquid Transition of Colloidal Stearic Acid*, Current Science, 8, 360 (1939).

The Examiner has rejected claims 1, 2, 4-8, 10-12, 14, 15 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Tondre in view of Rouse and Dombay, Hagan, Nitta, Streett, or Yan and has correspondingly rejected claims 12, 13, 16, and 17 as being unpatentable over these references and further in view of Khomutov, Ohno, or Subba Ramaiah.

Issues

Has Appellant established error in the Examiner's conclusion of prima facie obviousness for independent claims 1 and 7, and, if not, does Appellant's § 1.132 Declaration evidence of nonobviousness outweigh the Examiner's evidence of obviousness?

Findings of Fact

Tondre discloses an automated method and device for measuring a dependent property, namely, turbidity of a liquid in a measuring cell while changing the independent variables of temperatures and component concentration in order to construct a ternary phase diagram (581, first para.; 582, last para.; 583, at "Principle"; 585, first full para.). The temperature is changed and measured by a temperature programmer and probe, and the concentration is changed by a diluter with programmer (583, last full para.; para. bridging 583-85; Fig. 2 at 584). Tondre's automated method corresponds to the claim 1 method in all respects except for the clause 5) step wherein values and measuring points are stored electronically in a computer and the clause 6) step of coordinating and visualizing the electronically stored measuring points in a three-dimensional diagram. The automated device of Tondre corresponds to the claim 7 device in all respects except for the clause b) computer for receiving, storing, calculating and compiling data, values and measuring points and the clause c) equipment for

visualization of the measuring points stored in the computer in a three-dimensional diagram.

Rouse discloses an automated method and system wherein computer equipment controls the operation and receives, stores, and calculates data from the operation and then compiles and visualizes the data into a phase diagram (Abstract; “EXPERIMENTAL PROCEDURES” at 38-40; Figures 2-3).

Dombay, Hagan, Nitta, Streett and Yan each discloses an automated method and apparatus wherein a computer system obtains and manipulates data in order to generate a three-dimensional diagram.

Appellant acknowledges that “three-dimensional diagrams of the same type as in the present invention” (App. Br., para. bridging 38-39) were known in the prior art, although these three-dimensional diagrams were manually, rather than computer, generated.

Principles of Law

When the question is whether a claim to a combination of prior art elements is obvious, “a court must ask whether the improvement [represented by the claim] is more than the predictable use of prior art elements according to their established functions.” *KSR Int’l. Co. v. Teleflex Co.*, 127 S. Ct. 1727, 1740 (2007). “When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.” *Id.*

“An obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not.”

Leapfrog Enterprises, Inc. v. Fisher-Price, Inc., 485 F.3d 1157, 1161 (Fed. Cir. 2007). “Accommodating a prior art mechanical device that accomplishes that goal [of the claimed device] to modern electronics would have been reasonably obvious to one of ordinary skill in designing children’s learning devices. Applying modern electronics to older mechanical devices has been commonplace in recent years.” *Id.*

“A nexus between the merits of the claimed invention and evidence of secondary considerations is required in order for the evidence to be given substantial weight in an obviousness decision.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 668 (Fed. Cir. 2000) (quoting *Simons Fastener Corp. v. Ill. Tool Works, Inc.*, 739 F.2d 1573, 1575 (Fed. Cir. 1984)).

Analysis

We begin this analysis by observing that the Appeal and Reply Briefs are replete with allegations in favor of patentability which are unsupported by evidence or meaningful rationale. For example, Appellant alleges that the applied prior art does not disclose the temperature determining limitation in step 2) of claim 1 (App. Br. 19) but does not explain why this limitation is not satisfied by Tondre’s temperature programmer or probe. Similarly, Appellant alleges that a “teaching away” is present in certain references (App. Br. 36), that the Examiner’s obviousness conclusion is based on an improper “obvious to try” argument (App. Br. para. bridging 42-43), and that certain references are “[n]on-analogous art” (App. Br. para. bridging 43-44). However, none of these allegations is supported by the established legal analysis for determining a “teaching away”, an inappropriate “obvious to try” theory, or “non-analogous art”. Such unsupported allegations do not constitute argument within the meaning of 37 CFR § 41.37(c)(1)(vii) and

will not be considered or further commented upon in our assessment of the issues before us.

Appellant argues that a motivation and reasonable expectation of success are lacking from the combination of reference teachings proposed by the Examiner (App. Br. 33-42). According to Appellant, “[o]ne of ordinary skill in the art cannot broadly apply an automated means to the Tondre method since Tondre fails to disclose, *inter alia*, any recording of the independent variables [or] three-dimensional diagrams of the kind recited in the presently claimed invention (only two-dimensional diagrams depicted in the reference)” (App. Br. 35). In further support of this argument, Appellant states that “one of ordinary skill in the art cannot broadly apply an automated means to the Tondre method by using the Rouse disclosure since the Rouse sample is dosed with a cosurfactant in quantity that is more than enough to clear the sample, wherein the additions of oil and cosurfactant are unpredictable” (*id.*). Appellant’s argument is unpersuasive.

We agree with the Examiner that it would have been *prima facie* obvious for an artisan to enhance the automated method and device of Tondre with a computer control system of the type taught by Rouse in order to obtain the benefits thereof. Contrary to Appellant’s belief, the fact that Tondre discloses two-dimensional rather than three-dimensional diagrams or that the sample exemplified by Rouse is dosed with a cosurfactant does not in any apparent way militate against this obviousness conclusion. On the other hand, this conclusion is supported by the fact that applying modern electronics to older mechanical devices has been commonplace in recent years as evidenced by Rouse.

We also agree with the Examiner's conclusion that an artisan would have found it *prima facie* obvious to provide Tondre's automated method and device with computer equipment for generating three-dimensional diagrams in order to obtain the advantages of such computer-generated diagrams in view of Dombay, Hagan, Nitta, Streett, or Yan. Moreover, this obviousness conclusion is reinforced by Appellant's acknowledgement that the prior art includes "three-dimensional diagrams of the same type as in the present invention" (App. Br. para. bridging 38-39).

These conclusions of *prima facie* obviousness are supported by the fact that the method and device resulting from the proposed combination of reference teachings predictably use prior art features according to their established functions. In an attempt to show the contrary, Appellant proffers the § 1.132 Declarations filed February 16, 2006 and August 25, 2006 of Rolf Sköld. According to Appellant, these Declarations evince commercial success, unexpected advantages and solution of a long-felt need (App. Br. 51-56; Reply Br. 12).

Declarant Sköld states:

The patent subject instrument and method is being developed commercially and a null series of apparatuses has been produced. Actual marketing has not yet been initiated, but as a result of interactions with the research community three instruments have already been placed with major industrial corporations

(Item 4 of each Declaration).

The fact that "three instruments have already been placed with major industrial corporations" (*id.*) does not constitute probative evidence of commercial success, unexpected advantages, or solution of a long-felt need. Regardless, Appellant has established no nexus between the merits of the

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invention defined by claims 1, 7 and the Declaration evidence; therefore, this evidence cannot be given substantial weight in the obviousness decision under consideration.

Conclusions of Law

Appellant has failed to show that the references applied in rejecting claims 1 and 7 do not establish a prima facie case of obviousness.

Appellant also has failed to present evidence of nonobviousness which outweighs the Examiner's reference evidence of obviousness.

Accordingly, we sustain each of the § 103 rejections advanced by the Examiner in this appeal.

ORDER

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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